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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------|------------------|
| 10/761,786 | 01/21/2004 | Theodore C. White | MP0795 | 3539 |
| 7590 02/10/2006 | | | | |
| Harness, Dickey & Pierce, PLC. P.O. Box 828 Bloomfield Hills, MI 48303 | | | EXAMINER SUN, SCOTT C | |
| | | | ART UNIT 2182 | PAPER NUMBER |
| DATE MAILED: 02/10/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/761,786 | WHITE ET AL. | |
| | Examiner | Art Unit | |
| | Scott Sun | 2182 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4/4/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 12 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the claims describe a method that is not limited to concrete embodiments. The claims detail manipulation of data segments, which lacks practical application because it can easily be construed as an abstract idea as well as having no concrete or useful application/result. It is recommended that modifications be made so that the claims reflect a method that is performed by hardware devices such as a read assembly module, registers, or a command queue as suggested by the other claims and the disclosure of the invention.
3. To expedite a complete examination of the instant application, the claims rejected under 35 USC 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 5 is rejected under 35 U.S.C. 102(e) as being anticipated by Kim (PG Pub #US 2002/0176301).

6. Kim discloses a system (shown in figure 11) for concatenating data segments before the data segments are sent to a request host system, comprising:

A read assembly module (circuit in figure 11);

A read command queue (command buffer 24) which provides information to the read assembly module;

A controller (30) that controls the read command queue (paragraph 62);

Examiner notes that there is nothing in Kim's teachings that precludes Kim's invention to perform the functions cited in the preamble.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3, 4, 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Brodeur (PG Pub #2003/0120797).

9. Regarding claim 6, Kim discloses the system of claim 5, where the read assembly module includes a first register (data register 26, address register 28) for receiving data segments and a data start address (paragraph 62);

Kim does not disclose explicitly a second register for concatenating data segments having different data segment size. However, Brodeur discloses a second register (figure 1, register R3) for concatenating data segments having different data segment size (paragraph 45). Teachings of Kim and Brodeur are from the same field of storage systems, and specifically of storage controllers.

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to combine teachings of Kim and Brodeur by adding the data fragment assembly circuitry into the system disclosed by Kim for the benefit of minimizing unaligned accesses (paragraph 5).

10. Regarding claim 8, Kim discloses claim 5, wherein Brodeur further discloses the system comprising a FIFO (buffer 33) for storing concatenated data segments (paragraph 45).

11. Regarding claim 9, Kim discloses claim 5, and further discloses where the read command queue includes the data start address (address buffer 22). Brodeur further

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discloses a data length (sequence numbers, paragraph 35; figure 3). Examiner notes that sequence numbers represent every 8 bytes of data.

12. Regarding claim 10, Kim and Brodeur combined disclose claim 9, and Brodeur further discloses a data length counter (buffer 33, paragraph 35) keeps a data length count. Examiner notes that sequence numbers are stored within buffer 33.

13. Regarding claim 11, Kim and Brodeur combined disclose claim 9, and Kim further discloses wherein a data start register (address register 28; paragraph 62).

14. Claims 1, 3, 4, 12 and 13 are substantially similar to the above rejected claims. The same arguments are applied.

15. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Brodeur and further in view of Davis (PG Pub #US 2004/0260866).

16. Regarding claim 7, Kim and Brodeur combined disclose claim 6, and Brodeur further discloses where the read assembly module also includes a third register that holds data before it is sent to the second register (registers R1 and R2; paragraph 45).

Kim and Brodeur combined do not disclose explicitly a fourth register for padding. However, Davis discloses a register (register 534) for padding data segments if padding is needed (paragraph 40, 46). Teachings of Kim, Brodeur, and Davis are from the same field of storage systems, and specifically of storage controllers.

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to combine teachings of Kim and Brodeur further with teachings of

Davis by adding a padding register in the combined system of Kim and Brodeur for the benefit of normalizing layout (Davis, paragraph 35).

17. Claim 2 is substantially similar to claim 7. The same arguments are applied.

Conclusion

18. Other publications are cited to further show the state of the art with respect to data concatenation. Refer to form 892, "Notice of References Cited", for a complete list of relevant prior arts cited by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Sun whose telephone number is (571) 272-2675. The examiner can normally be reached on M-F, 10:30am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KIM HUYNH
SUPERVISORY PATENT EXAMINER

2/2/06